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Post-Operative Prescription of Opioid Medications and Patient Education: A Pilot Study

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Post-Operative Prescription of Opioid Medications and Patient Education: A Pilot Study

Abstract
Introduction:

Opioid medications are essential in the management of pain. 80-85% of surgical patients and 51% of inpatients are discharged with opioid prescriptions. With increased prescriptions, an increase in opioid abuse and overdose was identified. In 2018, nearly 47,000 deaths were reported secondary to opioids. Also, in 2015, 504 billion dollars were spent on the opioid crisis.

Our aim was to determine if our division, urology, was prescribing opioids appropriately in the post-operative setting. We sought to identify gaps in patient knowledge of opioid risks, storage, and disposal.

Methods:

Our institution initiated an after-visit summary (AVS) detailing opioid abuse, storage, and disposal. This AVS was given to all patients that were discharged, inpatient and outpatient, with an opioid prescription. Our group analyzed patient use of opioids and knowledge before and after AVS initiation in 2019-2020. This was done using surveys at initial follow up of post-operative patients. Only completed surveys were analyzed, 50 pre-protocol and 44 post-protocol.

Results:

While no statistically significance difference was noted for patient knowledge, we observed a clinical difference in usage of entire opioid prescription, 20% pre-protocol vs 11% post-protocol. More patients disposed of narcotics, 60% pre-protocol vs 91% post-protocol. Pre-protocol, zero patients identified addiction as a risk of opioid use while four post-protocol. Additionally, areas of improvement were identified within the AVS.

Conclusion:

The survey was not statistical significance, it suggested clinical differences. Opioid prescribing is important in medicine but requires continued learning of best practices and understanding of opioid risks.

Keywords

opioid prescription, opioid abuse, opioid disposal, patient education

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Abstract

**Introduction:** Opioid medications are essential in the management of pain. Nearly 80-85% of surgical patients and 51% of inpatients are discharged with opioid prescriptions. With increased prescripions, an increase in opioid abuse and overdose has been identified. In 2018, nearly 47,000 deaths were reported secondary to opioid usage. Also, in 2015, 504 billion dollars were spent on addressing the opioid crisis.

Our aim was to determine if our Urology division was prescribing opioids appropriately in the post-operative setting. We sought to identify gaps in patient knowledge of opioid risks, storage, and disposal.

**Methods:** Our institution initiated an after-visit summary (AVS) detailing opioid abuse, storage, and disposal. This AVS was given to all patients that were discharged from the inpatient and outpatient settings with an opioid prescription. Our group analyzed patterns of patient use of opioids and knowledge before and after AVS initiation in 2019 – 2020. This was done using surveys at the initial post-operative visit and only completed surveys were included in the study.

**Results:** A total of 50 pre-protocol and 44 post-protocol surveys were included for analysis. While no statistically significance difference was noted for patient knowledge, we observed a difference in usage of the entire opioid prescription, 20% pre-protocol vs 11% post-protocol. A greater number of patients disposed their narcotic prescription after initiation of the protocol (91%) when compared to the pre-protocol period (60%). In addition, more patients (4) identified the risks of opioid addiction after initiation of the protocol compared to none prior to the protocol. Additional areas of improvement were identified within the AVS.

**Conclusion:** Although not statistically significant, our study demonstrated changes in clinical patterns of opioid usage following initiation of the AVS protocol. Further efforts are needed to increase our understanding of the best opioid prescribing practices and their associated risks.

Introduction

Opioids are an integral aspect of medical care and are frequently used in the management of pain. While these medications are extremely important, they are associated with significant risks to patients. Because of these significant risks, all prescribers require a comprehensive understanding of the risks of opioid usage and strategies to prevent opioid abuse.

Opioids are prescribed to 80 – 85% of patients after a surgical procedure and over half of patients at hospital discharge.1,2 In the 1990’s, there was a movement for incorporating pain as the “fifth vital sign.” This combined with an increase in the importance of patient satisfaction scores led to liberal prescription of opioid medications. This liberal attitude towards opioid prescription contributed to a rise in opioid-related deaths, with 47,000 deaths reported in 2018.3 This opioid abuse is also associated with a large economic burden with approximately 504 billion dollars being spent in 2015 to address the opioid crisis.4

As urologic surgeons, who regularly prescribe opioid medications post-operatively, it is important to be aware of the typical number of narcotics required after each procedure. It is also important to provide patients education on the addictive and abuse potential associated with narcotics, as well as proper disposal of any unused medications. Our team set out to evaluate gaps in patient’s knowledge regarding opioid medications and opioid disposal as well as gathering input about patient personal experiences with usage of opioids.

The aim of our pilot study is to determine the effect of implementation of the after-visit summary (AVS) on the patient knowledge of opioid risks, storage, and disposal.

Methods

We developed a survey instrument to assess the patient’s knowledge and understanding about narcotics, their usage practices and disposal (Fig. 1). This anonymous survey instrument was distributed to all urology surgical patients (after both inpatient and outpatient surgical procedures) at the first post-operative visit about one to two weeks after their surgical procedure. The survey instrument was given to the patient by the clinic secretary at the time of check-in and collected by the nursing staff or surgeon. All surveys were collected at the same visit and only completed surveys were included. The study was reviewed and received IRB exemption.

The initial data collection was conducted in 2019. After 2019, our institution initiated a standardized discharge format (after-visit summary- AVS) to discuss the risks of opioid use and options for disposal of any unused medication. (Fig. 2). This new AVS was implemented for the entire hospital system to include both inpatients and outpatients. Following implementation of the new AVS protocol, the same survey instrument was distributed in 2020 to all urology patients (after in-patient and out-patient surgical procedures) at their first post-operative visit about one to two weeks after surgery. Data from the pre and post intervention periods were compiled in Microsoft Excel and compared using a Chi Square test.

Results

We collected 50 and 44 survey responses from the period before (2019) and after (2020) implementation of the AVS protocol, respectively. Forty patients (40 out of 50 patients-80%) from the pre-protocol period and 36 patients (36 out of 44 – 82%) from the post-protocol period were prescribed opioids. We noted a statistically insignificant decrease in the usage of the entire prescription of opioids following implementation of the new AVS protocol [4 out of 36 patients post-protocol (11%) versus 8 out of 40 patients pre-protocol (20%), p = 0.44]. Simultaneously, we noted a statistically insignificant increase in the rate of narcotic disposal following implementation of the new AVS protocol [10 out of 44 patients (91%) post-protocol versus 30 out of 50 patients pre-protocol (60%), p = 0.34]. Four patients from the post-protocol period identified addiction as a risk factor with opioid usage compared to none from the pre-protocol period. We also found that there were no statistically significant differences in level of patients’ knowledge and understanding of the various aspects of opioid usage and what to do with leftover opioids. (p > 0.05 for all values) (Fig. 3).
1. Were you prescribed narcotic pain medications recently (oxycodone, hydrocodone)?
   a. Yes
   b. No

2. Did you use all of the of the pain medication pills (oxycodone, hydrocodone)?
   a. Yes
   b. No

3. If no, why did you not use all of your medication given?
4. How often do you reuse old medications?
   a. Never
   b. Sometimes
   c. Often
   d. Most of the time
   e. Does not apply to me

5. How many bottles of old medication do you have in your house?
   a. 0-5
   b. 6-10
   c. 11-15
   d. 15+

6. What is the biggests risk of keeping old prescriptions on narcotics in your house?
7. If you had any extra prescription medication what would you do with it? (mark all that apply):
   a. Keep it, in case I need to use it later
   b. Keep it, because I didn't know what to do with it
   c. Throw it in the trash
   d. Put it in the toilet
   e. Bring it back to my doctor
   f. Bring it back to the pharmacy
   g. Take it to the police station
   h. Other:

8. You keep your old medications for ________? (mark all that apply)
   a. Really don't need it
   b. I do not keep old medication
   c. So I don't have to buy more in the future
   d. Just in case I have some pain/similar problem
   e. For other health problems
   f. Other:

9. How often do you use old medications?
   a. Never
   b. Sometimes
   c. Often
   d. Most of the time
   e. Does not apply to me

10. Have you ever lost or had a bottle of medication stolen?
    a. Yes
    b. No

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**Opioid Pain Medicine Safety**

- Opioid pain medicine on your home medicine list:
  - OXYCODONE 5 MG TABLET

- Opioid pain medicines may be habit-forming, even when taken as prescribed. With long term use they can result in addiction, abuse, or misuse. Opioid medicines may not be the best option for long-term pain. There are ways to treat and manage pain without opioids and even without medicines. Ask your doctor if you have questions about why an opioid medicine is the best option.

- Some side effects can occur when taking pain medicines, especially opioids.
  - Common Side Effects (Talk to your doctor or pharmacist if you have questions)
    | Side Effect | Dangerous Side Effects (Call 911 and seek immediate medical attention) |
    |-------------|---------------------------------------------------------------------|
    | Constipation | Can't seem to wake up or seems drowsy |
    | Nausea | Severe confusion |
    | Sleepiness | Stop breathing or breathing very slowly |
    | Impaired motor skills | Passes out or has a seizure |

- To help reduce the risks to your health, be sure to follow these safety tips when taking your pain medicines:
  - Taking more opioid medicines than prescribed or combining opioids with other sedating medicines or with alcohol can be fatal. Ask your doctor or pharmacist if you have questions about medicine interactions.
  - Take your medicine as prescribed by your doctor. Know if you are supposed to take the medicine on a regular basis or only as needed.
  - If your medicine is taken on a regular basis, take it on time and the right dose. If you miss a dose, don’t double up the next one.
  - Don’t drive or use dangerous equipment while taking opioids.
  - Don’t take any medicine that was not prescribed to you, and don’t share your medicine with others.
  - Don’t take medicine that is expired or left over from an earlier treatment.

- Storing and disposing of your medicine safely:
  - Opioids need to be stored safely. If possible, store the medicine in a locked container or cupboard that others cannot access. Store the medicine in a cool dry place. Avoid bathrooms, if possible.
  - Contact your pharmacy about where to dispose of unused medicine, or go to the following website for information on medicine disposal programs and locations in Nebraska. http://www.nebraskamedis.org

To learn how to get rid medicines safely at home, go to: www.fda.gov/ForConsumers/ConsumerUpdates/ucm101653

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**Discussion**

Opioids are highly effective at reducing pain post-operatively. However, opioid medications have a very high potential for abuse and addiction. Medical prescriptions for opioids started to increase sharply in the mid-to late 1990s. Shortly thereafter, nonmedical opioid use also started to increase markedly, reaching a peak of 2.7 million new users in 2002. Studies have shown that almost 2.5 million Americans suffer from an opioid-use disorder. In 2018, there were over 65,000 overdose deaths in America. Of those, nearly 47,000 involved opioids. Another source attributes almost 70% of the overdose deaths to opioid use. The over-prescription of opioids exposes patients to unnecessary risks of addiction, overdose, and death. Patients now receive more than twice the number of opioids that were considered the standard prescription prior to 1990. The opioid crisis not only affects Americans by contributing to many preventable deaths due to drug overdose; but is also associated with a significant economic burden. In the year 2015, approximately 504 billion dollars were expended to address...
the opioid crisis.8 It is felt that disposal of opioids in a safe manner can help to prevent unintentional usage. Despite implementation of the new AVS protocol in our study, we did not find a statistically significant difference in the patient’s knowledge of opioid disposal, which underscores the need for further education and quality improvement.

In our division, we regularly prescribe opioid medications for post-operative pain control. Our group identified the need to evaluate our patient’s current level of understanding on the addictive and abuse potential of narcotic medications, as well as proper disposal methods of unused medications and opioids.

Our study sample size was small, and our survey was not validated. Even with these limitations, we believe that several areas while not statistically significant, may still have clinical significance. We noted a decrease in the number of patients that used their entire narcotic prescription after implementation of the protocol (20% to 11%). This may represent patient’s relying more on non-narcotic pain medication for the control of post-operative pain to decrease their narcotic use. We also noticed a greater number of patients disposing their unused supply of narcotics after implementation of the new AVS protocol (91% from 60%). Four patients post-protocol implementation also stated they were worried about addiction compared to none prior to implementation of the protocol. While our results are not statistically significant, we believe that they may be of clinical significance.

We looked for areas of improvement on the after-visit summary (AVS) which is a document provided to the patients at the time of their discharge (after both inpatient and outpatient surgical procedures). This document is a form that summarizes their health care metrics and highlights changes and important aspects of their medical care. Multiple areas of improvement were identified on the AVS that we believe could improve the readability for patient education. These aspects include using fewer words and more images. We also identified that the link was non-functional, rendering it unhelpful to patients. Additionally, the AVS is printed for patients to take home, making it difficult for the patients to use the web link at home as it requires typing the web link on to their devices. We believe that the addition of a feature that auto populates the patient’s pharmacy would be beneficial, particularly if they can offer opioid disposal facilities.

It would also help to inform patients that the hospital associated outpatient pharmacy is a facility that can properly dispose of narcotic medications. Furthermore, there is no information on the next steps a patient should take if his or her medications are stolen. Having contact information on the AVS for patients with any issues or concerns relating to addiction or abuse would also be very helpful.

Future directives for how we, as a division, can improve our narcotic use as a group includes having individual discussions with patients prior to discharge on how many narcotic pain control pills they believe they will require to adequately control their pain upon discharge. As an institution, we will continue to improve and revise the AVS.

Although our sample size was small, we do believe that the patient education section is improving our patient’s understanding and knowledge on the risks of opioid medications.

Our study found no statistical difference in patient use of narcotics prior to and after the implementation of our institution’s narcotic education protocol. There was also no significant improvement in opioid understanding post-protocol. We do believe that overall, in a larger sample size, we may have been able to see differences between protocol groups exemplified by four patients showing concern for addition in the post-protocol survey. We do believe that this study has revealed directives for us to focus on in the future that require more research, including having discussions with patients about their perceived narcotic requirement on discharge from the hospital, and edits to the institutional AVS protocol which could improve patient education.

References


